

NORTHERN TERRITORY

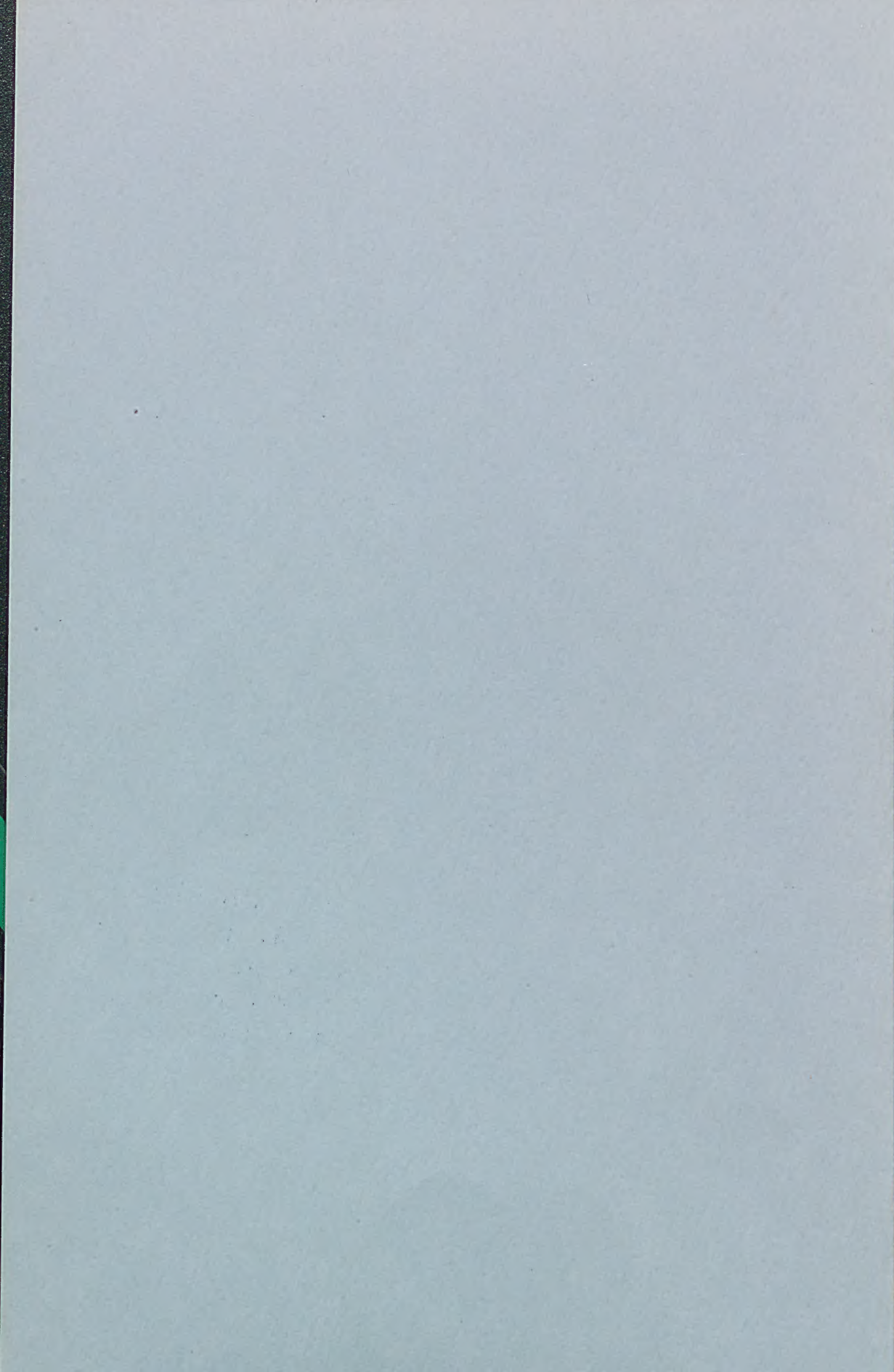
BOTANICAL BULLETIN

No. 2

**Botanical Notes from the Herbaria
of the Northern Territory**

Alice Springs (NT) & Darwin (DNA)

**Dept. of Industrial Development
Division of Primary Industry
N.T. Government**



MARIA ISLAND

GULF OF CARPENTARIA

C.R. Dunlop

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Botanical Notes from the Herbaria of the Northern Territory Alice Springs (NT) & Darwin (DNA).

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BOTANY OF MARIA ISLAND,

GULF OF CARPENTARIA

C.R. Dunlop

INTRODUCTION

Maria Island was visited for twenty one days in June 1972 as part of a fauna-flora survey conducted by the Animal Industry and Agriculture Branch (now the Division of Primary Industry) in a joint venture with C.S.I.R.O. Division of Wildlife Research, Darwin. This report presents the results of the botanical part of the survey.

Originally named as Cape Maria by a dutch navigator in the seventeenth century, Maria Island was recognised as a separate land mass by Matthew Flinders in 1803 (Flinders 1814). It lies south-east of the Roper River mouth, in the Gulf of Carpentaria between $14^{\circ}50'S$ - $14^{\circ}55'S$ and $135^{\circ}41'E$ - $135^{\circ}46'E$. Flinders, approaching the island from the south-east reports that he first saw it as two islands; the illusion is understandable as the island consists of two sandstone massifs, joined by a low sandy causeway, closed on each side by sand dunes. The low ground behind the sand dunes harbours a shallow fresh-water swamp.

Most of the land surface is low sandstone outcrops (less than 40 m.) with pockets of lateritic soil, the whole fringed with white sandy beaches with significant areas of stabilised dunes which have established vegetation. Beyond the shoreline, particularly on the north and east coasts, lies a rocky shelf, barely covered by the high tide and supporting, in places, coral reef.

There are several small creeks, all seasonal, though the largest, on the west coast, would appear to retain a supply of freshwater in one or two holes for most of the dry season. Freshwater could be obtained the year round from soaks in the beds of dry lagoons on the west coast, at Eagle Bay.

At the present time there are no inhabitants on the island. Aborigines from the Roper River area are known to have lived there before the establishment of missions on the mainland. Flinders (1814) reports seeing fires at night on the island and old campsites are still obvious near the shore.

HISTORICAL COLLECTIONS

Robert Brown was the earliest botanical collector, landing with Flinders in 1803. The number of specimens he collected has not been ascertained although they are held in the British Museum of Natural History. As he was there for less than a day (Flinders 1814) it is doubtful whether there were many. Bentham (1873) cites a specimen of J. Gulliver's collection at Maria Island. The author knows of no other collectors who have visited the island.

VEGETATION

The lack of any major altitudinal variation or major drainage systems and the relative uniformity of rock and soil types precludes any marked vegetational change, excepting the sharply delineated mangrove communities of the sea shore. Open eucalypt forest is dominant, occupying the major part of the island, being replaced in the wettest areas by Melaleuca communities and on the coastal dunes by grasslands, small areas of woodland and isolated patches of monsoon scrub. Four vegetation types are recognised; OPEN FOREST, LOW OPEN FOREST, MANGROVES, COASTAL DUNE COMPLEX.

- (i) OPEN FOREST, as defined by Specht (1970) may be divided into the following components:

Eucalyptus tetrodonta - E. ferruginea association on lateritic soil, Bossiaea bossiaeioides forming a dense understorey with smaller trees (Maytenus, Terminalia, Petalostigma, Buchanania) and a grassy floor. In this latter vegetation the dominants are replaced by E. polycarpa, Melaleuca, in the swampy areas.

Eucalyptus tetrandonta - E. ferruginea association, on sandstone, with a heath understorey (Calytrix, Hibbertia, Boronia, Burtonia subulata), with the occasional Livistona inermis and other small trees.

Eucalyptus miniata, on well drained sandy soil, formed small pure communities with a sparse understorey, the short grass Chamaeraphis hordacea being the dominant ground cover.

- (ii) LOW OPEN FOREST (Specht 1970) though restricted in extent, is represented by two well defined communities, one at the head of a brackish inlet, the other forming an overstorey to the freshwater swamp. In the first mentioned, Melaleuca acacioides forms a pure stand on white sand. Canopy closure is complete in some parts of the stand where the shade is dense enough to restrict the development of an understorey beyond patches of Fimbristylis and Eriachne. The extreme conditions of seasonal inundation have produced a similar, uniform community in association with the freshwater swamp. Melaleuca viridiflora, Eleocharis sp. and Gymnema lucida would seem to constitute the sum total of species present in the middle of the forest.
- (iii) MANGROVES - Best developed in the sheltered west coast, particularly along the two creek inlets, the mangroves are represented by two main species, Rhizophora stylosa and Avicennia marina. The former species fringes the deep water channels of the creek mouths, forming a very dense closed-forest. The ground surface is obscured by a network of stiltroots. Avicennia, the pioneering species, forms a low open forest along the beach front and behind it, Rhizophora, Aegialitis, Aegiceras and Osbornia have become established.
- (iv) COASTAL DUNE COMPLEX -
- (a) Stabilised dunes: The dunes of Maria Island are comparable to those of Groote Eylandt and Arnhem Land. They are elevated, a relict of the former shoreline when the sea level was higher (Specht 1958). The essential form of the dunes is still extant: a series of ridges parallel to the beach with ephemeral lagoons in the swales. The vegetation of the ridges is mainly grassland (Enneapogon, Chamaeraphis, Sorghum) with patches of tall shrubs (Hakea arborescens), eucalypts (E. foelscheana) and monsoon forest species (Owenia, Canarium, Diospyros, etc.). Nowhere on the island is the monsoon forest developed beyond isolated patches, consisting often of only a few trees in a clump with scramblers (Flagellaria, Paramignya) amongst them. Regular firing by the Aborigines at Rose River, in a similar situation, maintained the savannah, which was preferred for hunting. Control of fires in recent years has

allowed the encroachment of the monsoon forest with the subsequent elimination of the grassy understorey (P. Birnhof pers. comm.). It is probable that the monsoon forest will become established on these dunes if the island remains free of fires for prolonged periods.

(b) Swamp - A shallow freshwater swamp lies in the south of the island. During the wet season its size increases considerably, flooding a nearby melaleuca forest to one metre or more in depth. Tall grasses (Vetivaria, Leptochloa) and water lily (Nymphaea) are the main flowering plants.

(c) Strandline Vegetation - A considerable area of rolling dunes exists on the south-west coast. Spinifex longifolius, Triodia procera and Ipomoea pes-caprae are the main ground cover species with an overstorey of Casuarina equisetifolia. Salsola kali and Sesuvium portulacastrum are also common strand species. Small areas of salt pan, mainly on the west coast, show very little species diversity, covered by patches of Arthrocnemum with Sporobolus virginicus around the margins.

SUMMARY

In discussing the vegetation of the island, an attempt has been made to briefly define the component communities. It must be stressed however that the dominant community, eucalypt OPEN FOREST is the only one occupying a significant area. The other communities are relatively minor but nevertheless distinct. It would be possible to recognise other communities, e.g. E. tectifica - E. clavigera savannah woodland, though recognition would belie their importance.

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CHECK LIST OF PLANT SPECIES

ACANTHACEAE

Nelsonia campestris R. Br.

AIZOACEAE

Sesuvium portulacastrum L.

Trianthema sp.

AMARANTHACEAE

Achyranthes aspera L.

Alternanthera micrantha (Benth.) Domin

Ptilotus conicus R. Br.

ANACARDIACEAE

Buchanania obovata Engl.

APIACEAE

Trachymene didiscoides (F. Muell.) B. L. Burtt.

APOCYNACEAE

Carissa lanceolata R. Br.

Wrightia saligna (R. Br.) F. Muell. ex Benth.

ARECACEAE

Livistona inermis R. Br.

ASCLEPIADACEAE

Gymnanthera nitida R. Br.

Ischnostemma carnosum (Schlechter) Merr. et Rolfe

ASTERACEAE

Blumea saxatilis Zoll. et Mor.

Eclipta platyglossa F. Muell.

Flaveria australasica Hook.

Pluchea rubelliflora (F. Muell.) B. L. Robinson

Pterocaulon sphacelatum (Labill.) Benth. et Hook. f.

Sphaeranthus africanus L.

Thespidium basiflorum (F. Muell.) F. Muell.

BIGNONIACEAE

Dolichandrone heterophylla F. Muell.

BORAGINACEAE

Heliotropium ovalifolium Forsk.

Heliotropium paniculatum R. Br.

Trichodesma zeylanicum (Burm. f.) R. Br.

BURSERACEAE

Canarium australianum F. Muell. var. glabrum
Leenhouts

CAESALPINIACEAE

Cassia absus L.
Cassia mimosoides L.

CAPPARIDACEAE

Capparis sepiaria L.
Cleome viscosa L.

CARYOPHYLLACEAE

Polycarpaea breviflora F. Muell. var. gracilis
(Benth.) Pedley

CASUARINACEAE

Casuarina equisetifolia Forst. et Forst. f.

CELASTRACEAE

Maytenus cunninghamii (Hook.) Loes.

CENTROLEPIDACEAE

Centrolepis banksii (R. Br.) R. et S.
Centrolepis exserta (R. Br.) R. et S.

CHENOPODIACEAE

Arthrocnemum sp.
Salsola kali L.

COMBRETACEAE

Lumintzera racemosa Willd.
Terminalia latipes Benth.
Terminalia pterocarya F. Muell.
Terminalia volucris R. Br.

CONVOLVULACEAE

Cressa cretica L.
Evolvulus alsinoides L.
Ipomoea pes-caprae (L.) R. Br. ssp. brasiliensis
(L.) Ooststr.
Ipomoea coptica (L.) Roth. ex R. et S.
Merremia tridentata (L.) Hall. f.
Operculina turpethum (L.) S. Manso

CUCURBITACEAE

Melothria maderaspatana (L.) Cogn.

CUPRESSACEAE

Callitris intratropica R. T. Bak. et H. G. Sm.

CYPERACEAE

Bulbostylis barbata (Rottb.) C. B. Clarke
Cyperus aquatilis R. Br.
Cyperus conicus (R. Br.) Boeck.
Cyperus holoschoenus R. Br.
Cyperus ochroleucus Boeck.
Eleocharis atropurpurea (Retz.) Kunth.
Fimbristylis cymosa R. Br.
Fimbristylis dichotoma (L.) Vahl.
Fimbristylis pterygosperma R. Br.
Fimbristylis rara R. Br.
Fimbristylis squarrulosa F. Muell.
Fimbristylis stenostachya S. T. Blake
Fimbristylis sp.
Fimbristylis velata R. Br.
Fuirena ciliaris (L.) Roxb.
Fuirena incrassatus S. T. Blake
Rhynchospora sp.
Schoenus sparteus R. Br.
Scirpus lateriflorus Gmel.
Scleria novae-hollandiae Boeck.

DILLENIACEAE

Hibbertia lepidota R. Br.

DROSERACEAE

Drosera indica L.

EBENACEAE

Diospyros ferrea (Willd.) Bakh. var. *humilis*
(R. Br.) Bakh.

EHRETIACEAE

Cordia subcordata Lam.
Ehretia saligna R. Br.

ELATINACEAE

Bergia ammannioides Roth.
Bergia pusilla Benth.

ERIOCAULACEAE

Eriocaulon cinereum R. Br.
Eriocaulon heterogynum F. Muell.
Eriocaulon spectabile F. Muell.

EUPHORBIACEAE

Andrachne decaisnei Benth.
Bridelia tomentosa Bl.
Chamaesyce atota (Forst. f.) Croizat
Chamaesyce filipes (Benth.) Hassall
Chamaesyce vachellii (Hook. et Arn.) Hara
Croton sp. nov.
Drypetes lasiogyna (F. Muell.) Pax. et K. Hoffm.
Euphorbia eremophila A. Cunn.
Excoecaria agallocha L.
Excoecaria parvifolia J. Muell.
Glochidion xerocarpus (O. Schwarz) Airy Shaw
Mallotus nesophilus F. Muell. ex J. Muell.
Petalostigma pubescens Domin
Petalostigma quadriloculare F. Muell.
Phyllanthus sp. aff. carpentariae J. Muell.
Sebastiania chamelaea (L.) J. Muell.

FABACEAE

Abrus precatorius L.
Atylosia cinerea F. Muell. ex Benth.
Atylosia marmorata Benth.
Bossiaea bossiaeoides (A. Cunn. ex Benth.)
A.B. Court
Brachysema bossiaeoides (Benth.) Benth.
Brachysema uniflorum R. Br.
Burtonia subulata (Benth.) Benth.
Canavalia maritima (Aubl.) Thouars
Crotalaria linifolia L.f.
Desmodium biarticulatum (L.) F. Muell.
Indigofera linifolia (L.f.) Retz.
Jacksonia odontoclada F. Muell.
Rhynchosia sp.
Tephrosia arnhemica C. T. White v. aff.
Tephrosia sp.
Uraria lagopodoides (L.) Desv. ex DC.

FLAGELLARIACEAE

Flagellaria indica L.

GOODENIACEAE

Goodenia sp.
Scaevola paniculata Ewart et Davies
Scaevola taccada Roxb.

GYROCARPACEAE

Gyrocarpus americanus Jacq.

HALORAGACEAE

Gonocarpus leptothecus (F. Muell.) Orchard

LAMIACEAE

Epimeredi salvifolius (R. Br.) Rothm.

LAURACEAE

Cassytha filiformis L.

LORANTHACEAE

Anyema sp.

Decaishnina petiolata (Barlow) Barlow

LYTHRACEAE

Ammania baccifera L.

Ammania triflora R. Br. ex Benth.

Lythrum arnhemicum F. Muell.

Nesaea crinipes (F. Muell.) Koehne

Pemphis acidula Forst. et f.

MALVACEAE

Abutilon indicum (L.) Sweet var. *australiense*

Hockr. ex J. Britt.

Hibiscus leptocladus Benth.

Hibiscus meraukensis Hochr.

Hibiscus tiliaceus L. ssp. *tiliaceus*

Thespesia populnea (L.) Sol. ex Corr.

MARSILEACEAE

Marsilea mutica Mett.

MELIACEAE

Owenia reticulata F. Muell

Xylocarpus australasicus Ridl.

MENISPERMACEAE

Tinospora smilacina Benth.

MIMOSACEAE

Acacia aulacocarpa A. Cunn. ex Benth.

Acacia galioides Benth. var. *galioides*

Acacia hammondii Maid.

Acacia hemsleyi Maid.

Acacia holosericea A. Cunn. ex G. Don

Acacia latifolia Benth.

Acacia leptocarpa A. Cunn. ex Benth.

Acacia multisiлика (Benth.) Maconochie

Acacia plectocarpa A. Cunn. ex Benth.

Acacia stigmatophylla A. Cunn. ex Benth.
Acacia sublanata Benth.
Acacia translucens A. Cunn. ex Hook.
Acacia umbellata A. Cunn. ex Benth.
Cathormion umbellatum (Vahl) Kostermans

MORACEAE

Ficus leucotricha Miq. var. *megacarpa* F. Muell. ex
Corner
Ficus virens Ait.
Ficus opposita Miq. var. *micrantha* (Miq.) Corner

MYOPORACEAE

Myoporum montanum R. Br.

MYRSINACEAE

Aegiceras corniculatum (L.) Blanco

MYRTACEAE

Calytrix exstipulata DC.
Eucalyptus clavigera A. Cunn. ex Schau.
Eucalyptus ferruginea Schau.
Eucalyptus foelscheana F. Muell.
Eucalyptus miniata A. Cunn. ex Schau.
Eucalyptus polycarpa F. Muell.
Eucalyptus tectifera F. Muell.
Eucalyptus tetradonta F. Muell.
Fenzlia sp.
Melaleuca acacioides F. Muell.
Melaleuca cajuputi Powell
Melaleuca leucadendron (L.) L.
Melaleuca symphyocarpa F. Muell.
Osbornia octodonta F. Muell.

NYCTAGINACEAE

Boerhavia diffusa L.

NYMPHAEACEAE

Nymphaea gigantea Hook.

OLEACEAE

Jasminum didymum Forst. f.

ONAGRACEAE

Ludwigia perennis L.

PANDANACEAE

Pandanus integer St. John

PASSIFLORACEAE

Passiflora foetida L.

PLUMBAGINACEAE

Aegialitis annulata R. Br.

POACEAE

Aristida holothera Domin
Chamaeraphis hordacea R. Br.
Cymbopogon ambiguus A. Camus
Dichanthium tenuiculum (Steud.) S. T. Blake
Digitaria eriolepis Henr.
Digitaria papposa (R. Br.) Beauv.
Diplachne parviflora (R. Br.) Benth.
Ectrosia danesii Domin
Ectrosia leporina R. Br.
Enneapogon glaber N.T. Burbidge
Eragrostis sp.
Eragrostis sp.
Eriachne armitii F. Muell. ex Benth.
Eriachne melicacea F. Muell.
Eriachne obtusa R. Br.
Eriachne triodioides Domin
Heteropogon contortus (L.) Beauv. ex R. et S.
Imperata cylindrica (L.) Beauv. var. *major* (Nees)
C.E. Hubbard
Ischaemum decumbens Benth
Leptochloa neesii (Thuv.) Benth.
Lepturus repens (Forst. f.) R. Br.
Panicum decompositum R. Br.
Paspalidium rarum (R. Br.) Hughes
Paspalum orbiculare Forst. f.
Paspalum vaginatum Swartz
Perotis rara R. Br.
Pseudopogonatherum contortum (Brongn.) A. Camus
Pseudoraphis spinescens (R. Br.) Vickery
Sacciolepis myosuroides (R. Br.) Hughes
Schizachyrium fragile (R. Br.) A. Camus
Schizachyrium pachyarthron Gardner
Setaria surgens Stapf
Sorghum sp. aff. *intrans* F. Muell. ex Benth.
Spinifex longifolius R. Br.
Sporobolus virginicus (L.) Kunth. var. *minor*
F.M. Bail.
Thaumastochloa brassii C.E. Hubbard
Triodia procera R. Br.
Vetiveria elongata (R. Br.) Stapf ex C.E. Hubbard
Whiteochloa airoides (R. Br.) Lazar.
Xerochloa imberbis R. Br.

PORTULACACEAE

Calandrinia quadrivalvis F. Muell.

PROTEACEAE

Grevillea dryandri R. Br.
Grevillea heliosperma R. Br.
Grevillea pungens R. Br.
Hakea arborescens R. Br.
Stenocarpus cunninghamii R. Br.

RHAMNACEAE

Alphitonia excelsa (Fenzl) Benth.
Colubrina asiatica (L.) Brongn.

RHIZOPHORACEAE

Bruguiera exaristata Ding Hou
Ceriops tagal (Perr.) C. B. Robinson
Rhizophora stylosa Griff.

RUBIACEAE

Borreria breviflora (F. Muell. ex Benth.) Specht
Guettarda speciosa L.
Hedyotis mitrasacmoides F. Muell.
Morinda citrifolia L.
Oldenlandia galioides (F. Muell.) F. Muell.

RUTACEAE

Boronia lanceolata R. Br.
Boronia lanuginosa Endl.
Micromelum minutum (Forst. f.) Wight et Arn.
Paramignya trimera (Olive) Burkill
Zanthoxylum parviflorum Benth.

SANTALACEAE

Exocarpos latifolius R. Br.
Santalum lanceolatum R. Br.

SAPINDACEAE

Atalaya hemiglauca (F. Muell.) F. Muell. ex Benth.
Dodonaea lanceolata F. Muell.
Dodonaea platyptera F. Muell.

SAPOTACEAE

Pouteria sericea (Ait.) Baehni

SCROPHULARIACEAE

Bacopa floribunda (R. Br.) Wettst.
Buchnera linearis R. Br.

Glossostigma spathulatum (Hook.) Arn.
Limnophila frangrans (Forst. f.) Seem.
Microcarpea muscosa R. Br.
Mimulus uvedaliae Benth.
Striga curviflora (R. Br.) Benth.

SIMAROUBACEAE

Suriana maritima L.

SMILACACEAE

Smilax australis R. Br.

STERCULIACEAE

Brachychiton diversifolius R. Br.
Helicteres cana (Schott.) Benth.
Waltheria indica L.

TILIACEAE

Corchorus sidoides F. Muell.
Grewia retusifolia F. Muell.
Triumfetta appendiculata F. Muell.

ULMACEAE

Celtis philippensis Blanco
Trema aspera (Brogn.) Bl.

VERBENACEAE

Avicennia marina (Forsk.) Vierh. var. *resinifera*
(Forst. f.) Bakh.
Clerodendrum cunninghamii Benth.
Clerodendrum inerme (L.) Gaertn.
Phyla nodiflora (L.) Greene
Vitex trifolia L. var. *simplicifolia* Cham.

VIOLACEAE

Hybanthus enneaspermus (L.) F. Muell. ssp.
enneaspermus

XYRIDACEAE

Xyris sp.

ZYGOPHYLLACEAE

Tribulus cistoides L.

VEGETATION SURVEY OF THE KEEP RIVER STUDY AREA

T.S. Henshall and A.S. Mitchell

ABSTRACT

A site for a proposed National Park on the Keep River, Northern Territory was surveyed in September 1975. The nine plant communities of the area were defined and a checklist of 180 species compiled.

INTRODUCTION

A vegetation survey of the Keep River Study Area was undertaken in late September 1975 in conjunction with the (then) Wildlife Section of the Department of Northern Australia. The study area is the site for a proposed National Park and the vegetation survey aimed to define the plant communities present and compile a checklist of the area.

LOCATION

The study area is adjacent to the Northern Territory/Western Australia border and covers some 33,600 ha. (map 1. and 2.).

CLIMATE

This is a semi-arid area with a summer monsoonal rainfall (760mm) (November-March) and a dry period of virtual drought for the rest of the year. Day temperatures remain high throughout the year, and even during winter the night temperature remains mild. Frosts do not occur in the study area. Plant collections were somewhat depauperate because the collecting was done so late in the dry season.

GEOMORPHOLOGY

Much of the area was composed of very dissected

sandstone outcrops giving the area a great natural beauty through the diversity of forms found in these rock outcrops. Between the outcrops were smoothly undulating erosional plains and along the Keep itself, a river flood plain. The entire area has a constantly changing topography with open flats, minor rock outcrops, streams, valleys and steep ridges providing spectacular and breathtaking scenery.

VEGETATION

In describing the plant communities occurring within the study area, the classification designed by Perry (1970) has been adopted. Transitional zones between communities were common throughout the area. The plant communities encountered were:

- (i) OPEN WOODLAND - This community is widespread on the plains country and would be the largest in the study area.

It consisted of a tree layer some 12-18m high, with Eucalyptus tetrodonta (stringybark), E. bleeseri (bloodwood), E. miniata (woollybutt), E. confertiflora, E. ferruginea, and Callitris columellaris being the main species.

In rocky areas where this community graded into a sparse low woodland it was common to find a lower tree layer (3-6m) including Terminalia carpentariae, Verticordia cunninghamii and Eugenia bleeseri. Sparsely occurring shrubs were Petalostigma quadri-loculare, Calytrix microphylla and Jacksonia sp.

The ground component consisted mainly of a rank Sorghum sp. with some smaller areas of Themeda australis and Heteropogon contortus as well as various annual grasses and herbs.

- (ii) SPARSE LOW WOODLAND - This community was distributed throughout the rocky areas, outcrops, and adjoining sand plain country, and in several areas graded into the open woodland. It consisted mainly of scattered low trees or tall shrubs 3-5m high.

It appeared to carry a wide variety of species including Buchanania obovata, Gardenia megasperma, G. pyriformis, Ficus spp. and several Acacia spp. (many of the Acacias appeared to have regenerated after bush fires through the area). Cochlospermum fraseri and Brachychiton paradoxum occurred on the sandy areas at the base of the rocky outcrops.

The ground cover was predominantly spinifex (Plectrachne bynoei) with a mixture of other grasses and herbs.

- (iii) BANKSIA WOODLAND - There was only one small area of this encountered around a permanent soak (The Melaleuca site). It consisted mainly of a dense stand of low-branched Banksia dentata to 6m high. It graded into an open woodland on the higher ground and down into a Melaleuca community surrounding the water. It was also bordered by an area of rocky outcrops supporting a low shrubland community.

The ground component was sparse, consisting mainly of low annual grasses, sedges and herbs.

- (iv) RIVERINE WOODLAND - This community often bordered waterholes, soaks, etc. and also occurred on the sandy flood plains adjacent to dry creek beds where Platyzoma microphyllum was often the most conspicuous ground component.

It was nearly always dominated by Pandanus with some Eucalyptus spp., Adansonia gregorii, Melaleuca spp. and Xanthostemon paradoxus. There was a wide variety of shrubs dependent, to some extent, on the adjacent communities. The ground layer was generally absent due to a heavy leaf litter. This community was often fronted by a fringing grass community where Coelorhachis rottboellioides usually dominated.

- (v) FRINGING FOREST - This tall dense community lined the banks of the permanent streams. It was dominated by Barringtonia acutangula (freshwater mangrove) and also included Melaleuca leucadendron, M. argentea, M. viridiflora, Cathormion umbellatum, Nauclea coadunta (Leichardt pine) and Eucalyptus camaldulensis (river red gum), with a shrub layer including Strych-

nos lucida, Excaecaria parviflora and Flagellaria indica as well as several creepers.

There was no ground layer due to the very deep leaf litter.

- (vi) LAGOON VEGETATION - In the permanent pools an aquatic community could be found including such plants as Blyxa echinosperma, Nymphaea gigantea, and Utricularia gibba.
- (vii) FERN GLADE - This community was generally found under rock ledges or other protected areas above permanent pools in the deep valleys and gorges where a continuous water supply was assured. The ferns most commonly found were Lygodium microphyllum and Dicranopteris linearis. The other fern species were generally uncommon.
- (viii) FRINGING GRASSES - A number of tall perennial grasses would often form a distinct community along stream banks. These grasses include Coelorhachis rottboellioides, Cymbopogon procerus and Sclerandrium truncatiglume.
- (ix) BLUE GRASS - At the No. 5A Bore another distinct community occurred on the clay soil around the dam. How much this community has been artificially influenced is not known, though it was well fenced from stock.

There was a variety of grasses including Dicanthium teniculum, Panicum decompositum and Aristida latifolia. Both Terminalia volucris (rosewood) and Hibiscus panduriformis were common. There were also many other small grasses and herbs.

SUMMARY

Within the survey area at least one new species and several new records were collected. These are listed in the botanical checklist.

The Keep River Survey Area is one of spectacular scenery, particularly in the gorges and rugged sandstone outcrops. Botanically, it is representative of the vegetation of low-latitude summer rainfall Australia. There are a number of new and interesting plants recorded from the area, and every effort should be made to preserve their habitat. It would be a most suitable and desirable area for a new National Park in the Northern Territory.

REFERENCE

- Perry, R.A. (1970), Vegetation of the Ord-Victoria Area. In Stewart, G.A., Perry, R.A., Paterson, S.J., Traves, D.M., Slatyer, R.O., Dunn, P.R., Jones, P.J., and Sleeman, J.R., Lands of the Ord-Victoria Area, Western Australia and Northern Territory. Land Research Series No. 28. C.S.I.R.O., Melbourne.

CHECK LIST OF PLANT SPECIES

PTERIDOPHYTA (FERNS)

ADIANTACEAE

- Cheilanthes tenuifolia (Burm. f.) Swartz var.
nudiuscula (R. Br.) F. M. Bailey
- Cheilanthes vellea (R. Br.) F. Muell.

BLECHNACEAE

- Blechnum orientale L.

DAVALLIACEAE

- Nephrolepis sp.

GLEICHENIACEAE

- Dicranopteris linearis (Burm. f.) Underwood

GYMNOGRAMMACEAE

- Platyzoma microphyllum R. Br.

LINDSAEACEAE

- Lindsaea ensifolia Swartz

SCHIZAEACEAE

- Lygodium microphyllum (Cav.) R. Br.

GYMNOSPERMAE

CUPRESSACEAE

- Callitris columellaris F. Muell.

ANGIOSPERMAE

ACANTHACEAE

- Nelsonia campestris R. Br.

AIZOACEAE

- Glinus lotoides L.

AMARANTHACEAE

- Alternanthera nodiflora R. Br.
- Gomphrena affinis F. Muell. ex Benth.
- Gomphrena brachystylis F. Muell.

ANACARDIACEAE

Buchanania obovata Engl.

APIACEAE

Platysace sp.

ARECACEAE

Livistona sp.

ASCLEPIADACEAE

Sarcostemma australe R. Br.

ASTERACEAE

Blumea integrifolia DC.

Eurybiopsis macrorrhiza (F. Muell.) N. T. Burbidge

Pterigeron odoratus (F. Muell.) Benth.

Pterocaulon glandulosum (F. Muell. ex Benth.)

Benth. et Hook. f. var. *velutinum* Ewart et Davies

Pterocaulon sphacelatum (Labill.) Benth. et Hook. f.

Vernonia cinerea (L.) Less. var. *lanata* Kost.

BARRINGTONIACEAE

Barringtonia acutangula (L.) Gaertn.

BOMBACACEAE

Adansonia gregorii F. Muell.

CAESALPINIACEAE

Cassia oligoclada F. Muell.

Cassia venusta F. Muell.

Petalostylis labicheoides R. Br. var. *cassioides*
Benth.

CARYOPHYLLACEAE

Polycarpaea involucrata F. Muell.

Polycarpaea longiflora F. Muell.

Polycarpaea spicata Arn.

Polycarpaea staminodina F. Muell.

COCHLOSPERMACEAE

Cochlospermum fraseri Planch.

COMBRETACEAE

Terminalia bursarina F. Muell.

Terminalia carpentariae C.T. White

Terminalia volucris R. Br. ex Benth.

CONVOLVULACEAE

Ipomoea sp.

CUCURBITACEAE

Melothria maderaspatana (L.) Cogn.

CYPERACEAE

Bulbostylis barbata (Rottb.) C.B. Clarke
Crosslandia setifolia W. V. Fitzg.
Cyperus cunninghamii (C.B. Clarke) C.A. Gardn.
Cyperus decompositus (R. Br.) F. Muell.
Cyperus haspan L.
Cyperus holoschoenus R. Br.
Cyperus vaginatus R. Br.
Fimbristylis nutans (Retz.) Vahl.
Fimbristylis pauciflora R. Br.
Fimbristylis rara R. Br.
Fimbristylis tetragona R. Br.
Fuirena ciliaris (L.) Roxb.
Rhynchospora affinis W. V. Fitzg.

DROSERACEAE

Drosera burmannii Vahl

EUPHORBIACEAE

Euphorbia hirta L.
Excaecaria parviflora J. Muell.
Petalostigma quadriloculare F. Muell.
Phyllanthus maderaspatanus L. var. *angustifolius* Benth.
Phyllanthus simplex Retz.
Sebastiania chamelaea (L.) J. Muell.

FLAGELLARIACEAE

Flagellaria indica L.

GOODENIACEAE

Goodenia sp.
Scaevola ?canescens Benth.

HAEMODORACEAE

Haemodorum brevicaule F. Muell.
Haemodorum sp.

HERNANDIACEAE

Gyrocarpus americanus Jacq.

HYDROCHARITACEAE

Blyxa echinosperma (C.B. Clarke) Hook. f.

LENTIBULARIACEAE

Utricularia gibba L. ssp. *exoleta* (R. Br.) P. Taylor

LOGANIACEAE

Strychnos lucida R. Br.

LORANTHACEAE

Decaishnina signata F. Muell. ex Benth.

MALVACEAE

Hibiscus meraukensis Hochr.

Hibiscus panduriformis Burm. f.

Sida acuta Burm. f.

Sida sp.

MELASTOMACEAE

Melastoma polyanthum Blume

Osbeckia australiana Naud.

MENISPERMACEAE

Tinospora smilacina Benth.

MIMOSACEAE

Acacia alleniana Maid.

Acacia difficilis Maid.

Acacia dunnii (Maid.) Turrill

Acacia megalantha F. Muell.

Acacia platycarpa F. Muell.

Acacia plectocarpa A. Cunn. ex Benth.

Acacia sp.

Acacia sp. nov.

Acacia translucens A. Cunn. ex Hook.

Acacia tropica (Maid. et Blakely) M. Tindale

Acacia tumida F. Muell.

Cathormion umbellatum (Vahl) Kostermans

Neptunia monosperma F. Muell.

MORACEAE

Ficus opposita Miq. var. *indecora* (A. Cunn. ex Miq.) Corner

Ficus platypoda (Miq.) A. Cunn. ex Miq. var. *cordata* Specht

Ficus platypoda (Miq.) A. Cunn. ex Miq. var. *minor* Benth.

Ficus platypoda (Miq.) A. Cunn. ex Miq. var. *platypoda*

Ficus racemosa L.
Ficus virens Ait.

MYRTACEAE

Calytrix microphylla A. Cunn.
Eucalyptus bleeseri Blakely
Eucalyptus camaldulensis Dehnh.
Eucalyptus confertiflora F. Muell.
Eucalyptus ferruginea Schau.
Eucalyptus miniata A. Cunn. ex Schau.
Eucalyptus ptychocarpa F. Muell.
Eucalyptus tetradonta F. Muell.
Eugenia bleeseri O. Schwarz
Melaleuca argentea W.V. Fitzg.
Melaleuca leucodendron (L.) L.
Melaleuca viridiflora Sol. ex Gaertn.
Verticordia cunninghamii Schau.
Xanthostemon paradoxus F. Muell.

NYMPHAEACEAE

Nymphaea gigantea Hook.

OLACEAE

Olax aphylla R. Br.

ONAGRACEAE

Ludwigia octovalvis (Jacq.) Raven ssp. *sessiliflora*
(Mich.) Raven
Ludwigia perennis L.

OPILIACEAE

Opila amentacea Benth.

PANDANACEAE

Pandanus sp.

PAPILIONACEAE

Atylosia ?grandiflora F. Muell. ex Benth.
Atylosia grandiflora F. Muell. ex Benth. var. *calycina* Benth.
Atylosia marmorata Benth.
Crotalaria alata Ham.
Crotalaria crassipes Hook.
Crotalaria cunninghamii R. Br.
Crotalaria trifolium Willd.
Jacksonia sp.
Psoralea pustulata F. Muell.
Sesbania benthamiana Domin

Templetonia hookeri (F. Muell.) Benth.
Tephrosia aff. *macrocarpa* Benth.

PASSIFLORACEAE

Passiflora foetida L.

POACEAE

Aristida latifolia Domin.
Brachyachne convergens (F. Muell.) Stapf
Coelorhachis rottboellioides (R. Br.) A. Camus
Cymbopogon procerus (R. Br.) Domin
Dactyloctenium radulans (R. Br.) Beauv.
Dicanthium teniculum (Steud.) S. T. Blake
Echinochloa colonum (L.) Link.
Elytrophorus spicatus (Willd.) A. Camus
Eragrostis tenax Jedw.
Eragrostis tenellula (Kunth.) Steud.
Eriachne basedowii W. Hartley
Eriachne ciliata R. Br.
Eriachne glauca R. Br.
Eriachne obtusa R. Br.
Heteropogon contortus (L.) Beauv. ex R. et S.
Ischaemum arundinaceum F. Muell. ex Benth.
Ischaemum australe R. Br.
Iseilema fragile S.T. Blake
Leptochloa brownii C.E. Hubbard
Panicum decompositum R. Br.
Plectrachne bynoei C. E. Hubbard
Sclerandrium truncatiglume (F. Muell. ex Benth.)
Stapf et C. E. Hubbard
Setaria apiculata (Scribn. et Merr.) K. Schum.
Sorghum sp.
Themeda australis (R. Br.) Stapf

PROTEACEAE

Banksia dentata L. f.
Grevillea decurrens Ewart et Davies
Grevillea refracta R. Br.
Persoonia falcata R. Br.

RHIZOPHORACEAE

Carallia brachiata (Lour.) Merr.

RUBIACEAE

Gardenia megasperma F. Muell.
Gardenia pyriformis A. Cunn. ex Benth.
Gardenia sp.
Hedyotis sp.
Nauclea coadunta J.E. Sm.

SAPINDACEAE

Distichostemon hispidulus (Endl.) Baill.

SCROPHULARIACEAE

Buchnera sp.

Ilysanthes mitrasacmoides O. Schwartz

Limnophila fragrans (Forst. f.) Seem.

Lindernia scapigera R. Br.

Scoparia dulcis L.

Stemodia lythrifolia F. Muell. ex Benth.

SOLANACEAE

Solanum echinatum R. Br.

Solanum lucanii F. Muell.

STERCULIACEAE

Brachychiton paradoxum Schott.

Waltheria indica L.

TILIACEAE

Grewia retusifolia Kurz.

Triumfetta appendiculata F. Muell.

Triumfetta denticulata R. Br. ex Benth.

Triumfetta micrantha F. Muell.

VITACEAE

Cayratia trifolia (L.) Domin

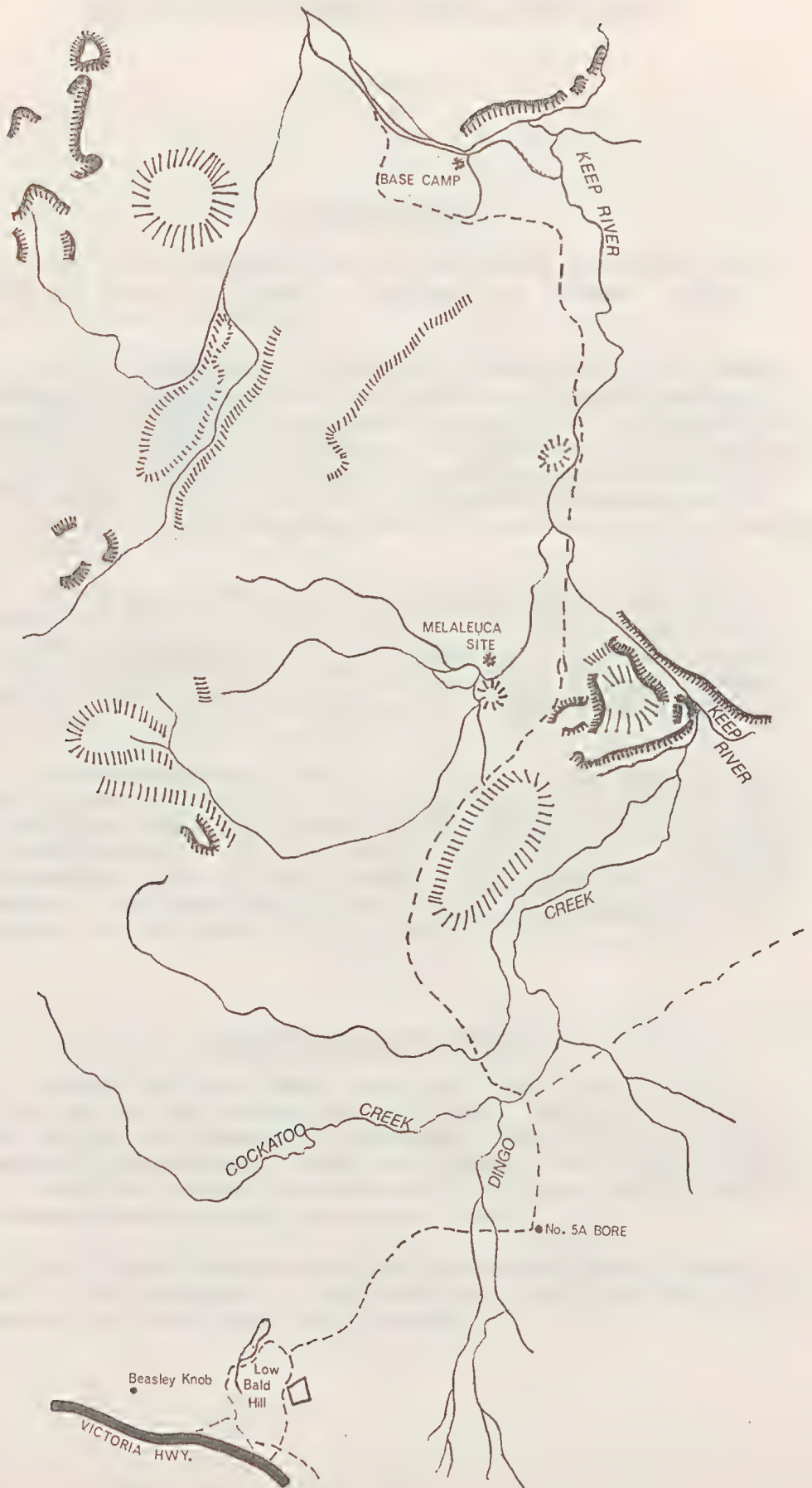
XYRIDACEAE

Xyris sp.

Keep River Study Area map 1



map 2





THE BOTANY OF PERON ISLAND, ANSON BAY

T.S. Henshall

INTRODUCTION

The Peron Islands are in the Timor Sea near the mouth of the Daly River, 5 km west of Channel Point, + 13°10'S and 130°03'E.

The islands were undoubtedly visited by the aborigines but they have left no traces. A large banyan, Ficus benghalensis L., indicates that the islands were visited by trepang fishermen from Macassar. The origin of the name of these islands is unknown, Feeken et al. (1970) does not list it but King (1827) records it on his chart of the area although the name is not listed in his text.

It is probable that the islands were named after Francois Peron the naturalist-zoologist on the French corvette Geographe under the command of Nicolas Baudin as there are two other localities, Cape Peron, Tasmania (Baudin) and Peron Peninsula, W.A. (Freycinet) named in his honour.

Late in October 1974 a collection was made of all plants then flowering or fruiting on North Peron. Small collections were also made during a quick visit to the southern island. The two floras were similar, although the smaller island, South Peron, appeared to have less species. The mangrove lichen Rocella montagnei is apparently restricted to South Peron.

VEGETATION AND SOILS

Except for one small area of clay tidal flat the island soils are coarse white sands. About one half of each island is seasonal fresh water swamp which is surrounded by semi-stabilised low dunes. The highest point is a sandhill at the northern tip of North Peron which is approximately 50 m above sea level.

There are three major and two minor plant communities. The species in each are distinct, few being represented in more than one habitat.

- (i) MANGROVES - The mangroves abound in the quiet waters of the lee sides and each species has a definite habitat and distribution pattern. Species such as Avicennia marina and Sonneratia alba are subject to inundation up to 2 m at high tide. Others such as Bruguiera exaristata and Ceriops tagal are above the high tide line.
- (ii) SWAMP - The freshwater swamp species also follow a strict distributional or successional pattern with mixed grasses and sedges at the edges, surrounding locally dominant Typha sp. and Phragmites karka which in turn enclose the major area of Imperata cylindrica. Apparently these swamps have not been burnt for many years as there is a bed of litter more than 35 cm deep which makes walking difficult. One small swamp at the western base of the high sandhill has a mixed flora of Imperata cylindrica, Cynodon dactylon, four or five sedges, Cressa cretica, Euphorbia serrulata and Merremia tridentata.
- (iii) WOODLAND ON SAND HUMMOCKS - The sand hummocks support the most varied communities on the islands. The upper-storey is an open woodland with scattered trees of Pandanus sp., Eugenia suborbicularis, Acacia auriculiformis, and Brachychiton diversifolium. The lower-storey is mixed grasses and forbs with a few shrubs. Near the coast Spinifex longifolius and Pandanus sp. dominate, and the exotic Calotropis procera has become firmly established. In places where the swamps narrow between the sand hummocks the paperbark, Melaleuca cajaputi, lines the channels.

The minor communities are:-

- (vi) MONSOON FOREST - A closed canopy broad-leaved forest of mixed species, with no understorey, and apparently sited over and dependent on the flow of underground water. These areas are small, mostly less than 0.5 km long and 100 m wide.

There appears to be two types present:

- (a) A form present on both sides of the creek with trees to 20 m high including palms and
(b) A coastal form having a jungle-thicket appearance and only 7 m high.

Both ferns and orchids were absent.

- (v) TIDAL SWAMP - These swamps have heavy clay soils and are bare except for scattered clumps of Salicornia and Tecticornia with mangroves around the margins.

SUMMARY

Unusual plants found included one climbing species of the Asclepiadaceae with inflated buds and chocolate coloured flowers; Portulaca pilosa, a first N.T. record; and Cyperus bulbosus which is normally restricted to the arid interior of the continent. Unexpectedly absent was any representative of the genus Eucalyptus.

As specimens were collected only from flowering and fruiting plants the checklist is not exhaustive, but it probably covers the majority of the flora. Voucher specimens for all species are lodged in the Herbarium of the Northern Territory, at Alice Springs.

At present North Peron is relatively unaffected by man. Some remains of an army encampment lie about the high sandhill where a Coast Watching Station was maintained during the Second World War. The huts and wireless masts of a geological exploration company are rusting nearby. South Peron has not fared so well. Pigs introduced as a source of meat for fishermen have multiplied, and their wallowing has disfigured large areas.

REFERENCES

- Feeken, Erwin H.J., Gerda E.E. Feeken & O.H.K. Spate (1970), The Discovery & Exploration of Australia, 318 pp. (Nelson).
- King, P.P. (1827), A Narrative of a Survey of Coasts of Australia, 1818-1822, 2 vols. (Facsimile edition 1969)

CHECK LIST OF PLANT SPECIES

LICHEN	
<i>Rocella montagnei</i>	1
ACANTHACEAE	
<i>Acanthus ilicifolius</i> L.	2,4
AIZOACEAE	
<i>Glinus oppositifolius</i> (L.) A. DC.	2,4
AMARYLLIDACEAE	
<i>Crinum asiaticum</i> L.	3
APOCYNACEAE	
<i>Wrightia pubescens</i> R. Br.	3
<i>Wrightia saligna</i> (R. Br.) F. Muell. ex Benth.	3
ASCLEPIADACEAE	
<i>Calotropis procera</i> (Willd.) R. Br. ex Ait.	3
<i>Microstemma tuberosum</i> F. Muell.	3
Unknown sp.	2
AVICENNIACEAE	
<i>Avicennia marina</i> (Forsk.) Vienh.	1
BURSERACEAE	
<i>Canarium australianum</i> F. Muell.	3
BOMBACACEAE	
<i>Camptostemon schultzi</i> Mast.	1
CAPPARIDACEAE	
<i>Capparis</i> sp.	4
<i>Cleome viscosa</i> L.	3,4
CHENOPODIACEAE	
<i>Arthrocnemum</i> sp.	5
<i>Suaeda australis</i> (R. Br.) Moq.	5
<i>Tecticornia australasica</i> (Moq.) Wilson	5
COMBRETACEAE	
<i>Lumnitzera racemosa</i> Willd.	3
COMMELINACEAE	
<i>Commelina ensifolia</i> R. Br.	2
COMPOSITAE (ASTERACEAE)	
<i>Blumea mollis</i> (D. Don) Merr.	3
<i>Blumea saxatilis</i> Zoll. et Mor.	3
<i>Vernonia cinerea</i> (L.) Less. var. <i>lanata</i> Kosk.	3

CONVOLVULACEAE

<i>Cressa cretica</i> L.	2,3
<i>Ipomoea pes-caprae</i> (L.) Sweet	6
<i>Merremia tridentata</i> (L.) Hall f.	3

CUCURBITACEAE

<i>Luffa aegyptiaca</i> Mill.	3,4
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CYPERACEAE

<i>Cyperus bifax</i> Clarke	2
<i>Cyperus bulbosus</i> Vahl.	3
<i>Cyperus conicus</i> (R. Br.) Boeck.	2
<i>Cyperus javanicus</i> Houtt.	2
<i>Cyperus scariosus</i> R. Br.	2
<i>Fibristylis sericea</i> R. Br.	3
<i>Schoenus falcatus</i> R. Br.	3
<i>Scirpus litoralis</i> Schrad.	2

DROSERACEAE

<i>Drosera petiolaris</i> R. Br. ex DC.	2
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EUPHORBIACEAE

<i>Drypetes lasiogyna</i> (F. Muell.) Pax et Hoff.	4
<i>Euphorbia</i> (?) <i>coghlanii</i> F. M. Bail.	3
<i>Euphorbia serrulata</i> Reinw.	3

FLAGELLARIACEAE

<i>Flagellaria indica</i> L.	4
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GOODENIACEAE

<i>Scaevola taccata</i> Roxb.	3
-------------------------------	---

GRAMINEAE (POACEAE)

<i>Brachiaria praetervisa</i> (Domin) C. E. Hubb.	2
<i>Cynodon dactylon</i> (L.) Pers.	2
<i>Dichanthium tenuiculum</i> (Steud.) S. T. Blake	2
<i>Digitaria ciliaris</i> (Retz) Koel.	3
<i>Enneapogon pallidus</i> (R. Br.) Beauv.	3
<i>Imperata cylindrica</i> (L.) Beauv. var. <i>major</i> (Nees.) C.E. Hubb.	2
<i>Panicum decompositum</i> R. Br.	2
<i>Paspalum orbiculare</i> Forst. f.	2
<i>Phragmites karka</i> (Retz) Trin. ex Steud.	2
<i>Sorghum plumosum</i> (R. Br.) Beauv.	3
<i>Spinifex longifolius</i> R. Br.	3,6
<i>Sporobolus virginicus</i> R. Br.	2

LAURACEAE

<i>Cassytha filiformis</i> L.	3
-------------------------------	---

LILIACEAE

- | | |
|-----------------------------------|---|
| <i>Asparagus racemosus</i> Willd. | 3 |
| <i>Smilax australis</i> R. Br. | 4 |

LORANTHACEAE

- | | |
|--|---|
| <i>Decaishnina signata</i> (F. Muell. ex Benth.) Tiegh.
ssp. <i>cardiophylla</i> (Domin) Barlow | 3 |
|--|---|

MALVACEAE

- | | |
|------------------------------|-----|
| <i>Hibiscus tiliaceus</i> L. | 4,6 |
| <i>Sida acuta</i> Burm. f. | 3 |
| <i>Sida spinosa</i> L. | 3 |

MENISPERMACEAE

- | | |
|-----------------------------------|---|
| <i>Tinospora smilacina</i> Benth. | 4 |
|-----------------------------------|---|

MIMOSACEAE

- | | |
|---|---|
| <i>Acacia auriculiformis</i> A. Cunn. ex Benth. | 4 |
|---|---|

MORACEAE

- | | |
|--|---|
| <i>Ficus benghalensis</i> L. (not collected) | 3 |
|--|---|

MYRTACEAE

- | | |
|--------------------------------------|---|
| <i>Calytrix exstipulata</i> DC. | 3 |
| <i>Eugenia suborbicularis</i> Benth. | 3 |
| <i>Melaleuca cajuputi</i> Powell | 3 |

NYCTAGINACEAE

- | | |
|-----------------------------|-----|
| <i>Boerhavia diffusa</i> L. | 3,6 |
|-----------------------------|-----|

PALMAE

- | | |
|---|---|
| <i>Livistona</i> sp. (seen but not collected) | 4 |
|---|---|

PANDANACEAE

- | | |
|---------------------|---|
| <i>Pandanus</i> sp. | 3 |
|---------------------|---|

PAPILIONACEAE

- | | |
|-------------------------------------|-----|
| <i>Canavalia rosea</i> (Sw.) DC. | 3 |
| <i>Crotalaria medicaginea</i> Lamk. | 3 |
| <i>Sesbania cannabina</i> Retz. | 2,4 |

PASSIFLORACEAE

- | | |
|--|---|
| <i>Adenia heterophylla</i> (Bl.) Koord. ssp. <i>australis</i>
(R. Br. ex Ait.) de Wilde | 4 |
| <i>Passiflora foetida</i> L. | 3 |

PLUMBAGINACEAE

- | | |
|-----------------------------------|---|
| <i>Aegialitis annulata</i> R. Br. | 1 |
|-----------------------------------|---|

PORTULACACEAE	
<i>Portulaca pilosa</i> L.	6
RHIZOPHORACEAE	
<i>Bruguiera exaristata</i> Ding Hou	1
<i>Carallia brachiata</i> (Lour.) Merr.	1,4
<i>Ceriops tagal</i> (Pers.) C. B. Robinson	1
RUBIACEAE	
<i>Dentella repens</i> (L.) Forst. et f.	2
<i>Morinda citrifolia</i> L.	4
<i>Timonius timon</i> (Spreng.) Merr.	4
RUTACEAE	
<i>Micromelum minutum</i> (Forst. f.) Wight ex Arn.	3,4
SCROPHULARIACEAE	
<i>Buchnera linearis</i> R. Br.	3
SOLANACEAE	
<i>Solanum tetrandrum</i> R. Br.	3
SONNERATIACEAE	
<i>Sonneratia alba</i> J. Sm.	1
STERCULIACEAE	
<i>Brachychiton diversifolium</i> R. Br.	3
<i>Sterculia quadrifida</i> R. Br.	3
TACCACEAE	
<i>Tacca leontopetaloides</i> (L.) Kuntze	3
TYPHACEAE	
<i>Typha</i> sp.	2
VERBENACEAE	
<i>Clerodendrum cunninghamii</i> Benth.	4
<i>Phyla nodiflora</i> (L.) Greene	3
<i>Premna corymbosa</i> (Burm. f.) Rottb. et Willd.	4
<i>Vitex trifolia</i> L.	3
VITACEAE	
<i>Cayratia trifolia</i> (L.) Domin	4
<i>Cissus acetosa</i> F. Muell.	3
XYRIDACEAE	
<i>Xyris complanata</i> R. Br.	3

ZYGOPHYLLACEAE

Tribulus cistoides L.

3

KEY

Mangrove 1, Fresh swamp 2, Hummocks 3, Monsoon 4, Tidal
Swamp 5, Beach 6

130°02'

130°04'

130°06'

13° 08' -

13° 10' -

13° 12' -



NORTH PERON

CHANNEL POINT

SOUTH PERON

-  Mangrove
-  Fresh Water Swamp
-  Sand Hummocks
-  Monsoon Forest
-  Tidal Swamp interspersed with Mangroves

0 1 2 3 4 km.

